Exhibit 4

NCBI E.ifrez

**BLAST 2 sequences** 

BLAST

Example

Help

## **BLAST 2 SEQUENCES**

This tool produces the alignment of two given sequences using BLAST engine for local alignment. The stand-alone executable for blasting two sequences (bl2seq) can be retrieved from NCBI ftp site Reference: Tatiana A. Tatusova, Thomas L. Madden (1999), "Blast 2 sequences - a new tool for comparing protein and nucleotide sequences", FEMS Microbiol Lett. 174:247-250

Program blastn Matrix Not Applicable
Parameters used in BLASTN program only:  Reward for a mutch: 1 Penalty for a mismatch: 2
Use Mega BI AST Strand option Both strands
Open gap 5 and extension gap 2 penalties  gap x_dropoff 50 expect 10.0 word size 11 Filter V Align
Sequence 1 Enter accession or GI 13027635 or download from file
or sequence in F.ASTA format from: 0 to: 0
Sequence 2 Enter accession or GI or download from file
or sequence in FASTA format from: 0 to: 0
accggaagcgctc:agacttggtcg
Align: Clea Input

Blast Result



## Blast 2 Sequences results

Entrez

BLAST

**OMIM** 

Taxonomy

Structure

## BLAST 2 SEQUENCES RESULTS VERSION BLASTN 2.2.3 [Apr-24-2002]

Match: 1 Mismatch: 2 gap open: 5 gap extension: 2  x_dropoff: 50 expect: 10.000 wordsize: 11 Filter V Align				
Sequence	ai		Length 2753	
Sequence			Length 25	